

two layers of ice without coming into contact with the ice. The butter is afterwards taken out, worked a little on the butter-worker, and again placed in the ice-trough before the final working. All this is done to preserve the grain of the butter, which is destroyed when it is washed in a soft state, and to thoroughly expel the buttermilk. Finally the butter is packed away in cold-storage rooms, awaiting transit.

In the free use of ice lies the great secret of the success of the Danes in butter-making; and that is also the secret of the success of the Colony of Victoria, which has during the past two years used ice-cooled chambers freely. How to secure the ice or the necessary cool-chambers is the problem to be solved. To secure either involves the use of refrigerating machinery. This can probably only be effected by the factory system, where alone sufficient quantities of butter can be made to warrant the erection of the necessary refrigerating-plant.

I have advocated the devising of means to procure ice during my circuit, and assisted also in devising means for cool-storage. Perhaps arrangements could be made with the various refrigerating companies for a supply of ice. Probably the creameries will see the necessity for making ice for their own use.

In Denmark and on the Continent, during the long and cold winter, an abundant supply of ice is stored for use in summer. Every farmhouse of any size, and all factories, have ice-houses, in which a supply of ice is stored during winter for summer use. But in this colony, on account of our temperate climate, ice cannot be so secured. The necessary cool-chambers for shipping the butter Home are in the meantime of the greatest importance, as pointed out in my last report. This, I hope, will receive due consideration at your hands. Butter of good quality may, at the present juncture, be placed on board the steamers, and, from the chambers not having the desired and uniformly low temperature (35° to 40°), it may not arrive in the Home market in good marketable condition.

As already pointed out, the more necessary requisite is sufficient cool-storage for the butter-product after manufacture, and while awaiting shipment. The irregular mode of shipment and want of space has during the past season operated seriously against the success of the butter-export trade, as at times butter ready for export has been kept on hand for two or three months, for the want of cool-space in steamers. And as no provision exists for the proper storage of the butter while awaiting transit, it has to be kept exposed to a high and varying temperature in the dairies and factories. When so treated butter soon loses its firmness of texture, and in many cases it becomes rancid in flavour.

New Zealand butter, from the defects of food, care of milk, treatment of cows, &c., soon deteriorates in flavour and grain. This cannot be too strongly impressed upon the butter-producers and exporters. I would again reiterate the necessity for proper cool-storage for the butter, both immediately after manufacture and while awaiting shipment. During the past season large quantities of butter have been sent by private individuals to export agents for shipment, and sometimes this butter was kept in the warehouses for a considerable time before it was shipped, subjected all the time to a high and varying temperature. I have, myself, often seen the butter-fat oozing through the seams of the boxes and kegs or casks. How could it be expected that butter so treated could, on its arrival Home, command remunerative prices? Another matter seriously damaging the butter-export trade is the practice of collecting large quantities of butter during the summer months from all sources by storekeepers, such butter being packed up in a haphazard way, and afterwards shipped Home. It is almost superfluous to point out the impossibility of making up a good sample of butter in this way. And, again, the reputation of the colony is damaged when exporters resort to the practice of branding the packages to make them appear to represent New Zealand creamery butter, with the object of deceiving the buyer. This too common practice, I think, should be put an end to by the strict enforcement of "The Patents, Designs, and Trade-marks Act, 1889," the provisions of which Act make such an action penal.

Without doubt the success of the butter-export trade rests upon obtaining the desired low temperature throughout the making, and while awaiting shipment and during transit. If all the butter exported from the colony was manufactured on the factory system the factories could devise the means of supplying the wants of the trade; but, as by far the greatest portion of the product is manufactured and exported by private individuals or the packing-house system, I would suggest for your earliest consideration the advisability of erecting cool-chambers at the principal ports of shipment. The butter could be sent to these after manufacture and kept until shipped. This seems to me to be the only solution of the difficulty as the industry stands at the present time. These establishments could be made self-supporting by making a small charge for storage. Were such cool-chambers established a classification of the product could then be made; but without such cool-storage chambers, classification at the port of shipment seems to be out of the question.

If butter is well made, and placed immediately in a cool-chamber at a temperature of from 35° to 40° , it will keep for an almost indefinite time. For the purpose of giving practical demonstration of this I have, during the past season, placed 56lb. of fresh butter in the Burnside Freezing-works. This butter was made over four months ago under my immediate supervision at the Mosgiel Dairy-factory. The temperature of the room in which the butter is being kept is about 22° Fahr., and the product is to-day in a first-class condition. This butter has not been packed in boxes, but is made up in half-pound prints, rolled in waxed butter-paper.

From the liability of New Zealand butter to soon lose its marketable qualities from the causes referred to, I cannot too strongly impress upon producers and exporters the necessity for shipping the product as soon as possible after it is manufactured—the sooner the better. Although it is not desirable to have butter frozen, especially if it is heavily salted, I have all along recommended that it should be but lightly salted and shipped in the freezing-chambers. Butter once frozen, especially if heavily salted, would not keep long when removed into a hot or varying temperature.

The question of packages is one which is continually cropping up, and is one to which no little attention should be devoted. It does not matter much what style of package is used, provided the butter is of good quality throughout, and the package is neat and attractive. The package should